What is claimed is:

1.   An audio apparatus for use in negative drive of a
loudspeaker having an internal impedance to perform a
desired amplitude-frequency characteristic, comprising:

an amplifier device that drives the loudspeaker
with a driving voltage;

a feedback device that performs a positive
feedback of a signal corresponding to the driving
voltage of the loudspeaker to the amplifier device with
a variable feedback gain, thereby causing the amplifier
device to generate a negative impedance effective to
negate the internal impedance of the loudspeaker; and

an adjustment device that decreases the variable
feedback gain of the feedback device as a level of the
driving voltage of the loudspeaker increases, thereby
adjusting the amplitude-frequency characteristic of the
amplifier device.

2.   The audio apparatus according to claim 1, wherein
the adjustment device comprises a detector that detects
the signal corresponding to the driving voltage in
terms of a load voltage of the loudspeaker, and a
converter that converts the detected load voltage to a
control voltage, and wherein the feedback device
comprises a voltage-controlled amplifier connected
between the converter and the amplifier device, and
having the variable feedback gain responsive to the

- 12 -

control voltage from the converter to perform the positive feedback to the amplifier device.

3.   The audio apparatus according to claim 1, wherein the adjustment device decreases the variable feedback gain of the feedback device only if the level of the driving voltage exceeds a critical level, and otherwise keeps the variable feedback gain constant as long as the level of the driving voltage remains under the critical level.

4.   The audio apparatus according to claim 1, wherein the adjustment device decreases the variable feedback gain of the feedback device as the level of the driving voltage increases so as to suppress the amplitude-frequency characteristic of the amplifier device, thereby preventing an output of the amplifier device from clipping.